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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
CONNOLLY, MARK A

ART UNIT	PAPER NUMBER
2115	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)	
Office Action Summary	09/788,191	MADDEN ET AL.	
	Examiner	Art Unit	
	Mark Connolly	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*amendments filed 7 May 2004*</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-35* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-5 and 7-35* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *17 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1- 5 and 7-35 have been presented for examination.

Claim Objections

2.   Claims 19 and 20 are objected to because of the following informalities: The claims

specify that floppy I/O is being redirected even though the pre-boot code resides on the hard

drive according to claim 17. It is interpreted that the redirected floppy I/O is redirected I/O from

the hard drive. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 3, 7-12, 28-29 and 31-32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Matthews et al [Matthews], US Pat No 6101601 in view of Stückelberg et al

[Stu] "Linux Remote-Boot mini-HOWTO:"

5.   Referring to claim 1, Matthews teaches the invention substantially including:

a.   retrieving an image from a file on the computer, the image containing pre-boot

code [fig. 5 and col. 5 line 60-col. 6 line 11].

b.   reading at least a first sector of pre-boot code and executing it, thereby passing

control of the computer to the pre-boot code first sector [fig. 5 and col. 5 line 60-col. 6

line 11].

Although Matthews teaches retrieving and reading pre-boot code, Matthews is not specific on how the retrieving and reading performed.

Stu explicitly teaches:

c.   retrieving an image from a file on a computer into RAM, the image containing pre-boot code [page 42].

d.   at least initiating redirecting I/O to emulate a peripheral storage device of the computer whereby a subsequent call to read a sector of data from the peripheral storage device returns data from an alternative source instead of returning data from the peripheral storage device, wherein the redirecting I/O step redirects floppy I/O to read from random access memory of the computer as the alternate source [page 42].

e.   reading at least a first sector of pre-boot code from the emulated peripheral storage device, and executing it, thereby passing control of the computer to the pre-boot code first sector [page 42].

It would have been obvious to one of ordinary skill in the art to perform the redirecting steps taught in Stu to perform the retrieving and reading in the Matthews system because Stu teaches in detail how a system is booted from an image file. Furthermore, even though Stu details booting remotely, Matthews teaches that remote booting can also occur locally by storing the image on the system [col. 4 lines 64-67].

6.   Referring to claim 3, although the Matthews-Stu system teaches a means for booting Linux, it is obvious that the same means could be used to boot DOS on the computer.

7.   Referring to claim 4, it is well known in the art that booting from a floppy and flashing a

BIOS execute in relatively the same manner. Therefore, it is obvious that the above procedure

can also be extended to additionally flash a BIOS.

8.   Referring to claim 7, the Matthews-Stu system teaches loading a floppy image into

extended memory as shown above.

9.   Referring to claim 8, it is obvious that the image would be loaded into memory through

the use of a memory manager and because the image is being loaded at the initial booting of the

computer, it is interpreted that the image or pre-boot code is the first code to be written into

memory thus being loaded before any other code.

10.   Referring to claims 9 and 10, the Matthews-Stu system teaches reading the pre-boot code

into RAM and that the redirected I/O reads the pre-boot code from RAM as shown above. It is

obvious that the region in memory the pre-boot code was stored could be contiguous.

11.   Referring to claims 11 and 12, Matthews and Stu teach using redirected I/O to read the

file it is well known in the art that files stored on disk may not be contiguous and therefore it is

obvious that in the Matthews-Stu system that at least two sectors of the file may not be

contiguous on disk.

12.   Referring to claim 28, this is rejected on the same basis as set forth hereinabove. Stu, and

Matthews teach the method and therefore teach the program performing the method.

13.   Referring to claims 29, bootstrapping is a well known concept in the art wherein an

operating system boots the computer. It is obvious that when the pre-boot code specifies an

operating system to load, bootstrapping would occur in order to load the operating system and

complete the booting of the computer.

14.   Referring to claims 31 and 32, theses are rejected on the same basis as set forth

hereinabove. Stu, and Matthews teach the method and therefore teach the program performing

the method.

15.   Claims 2, 15, 17-20 and 23-26 is rejected under 35 U.S.C. 103(a) as being unpatentable

over Matthews and Stu as applied to claims 1, 3, 7-12, 28-29 and 31-32 above, and further in

view of Bertram et al [Bertram] US Pat No 5261104.

16.   Referring to claim 2, Matthews and Stu do not explicitly teach that the operating system

booted from the redirecting step can be different from the one if the redirecting step had not been

used. In summary, Matthews and Stu does not teach that the redirecting step boots a completely

different operating system. Bertram teaches using a boot disk to boot a completely different

operating system onto a computer system [col. 4 lines 5-14 and lines 44-54]. It would have been

obvious to one of ordinary skill in the art to include the teachings of Bertram into the Matthews-

Stu system, in particular allowing the redirecting means to boot a different operating system,

because Bertram explicitly teaches that it is beneficial to a user to have the ability to boot

alternate operating systems if desired.

17.   Referring to claim 15, it is interpreted that other pre-boot code must be substituted for the

standard loader code in order to boot the alternate operating system.

18.   Referring to claim 17, this is rejected on the same basis as set forth hereinabove. Stu,

Matthews and Bertram teach the method and therefore teach the system performing the method.

Furthermore, it is well known that a hard drive stores a partition containing a file system.

Bertram and Matthews both teach that the code for loading an operating system not only

originate from a floppy disk but also from a hard drive [col. 7 lines 24-35 *in Matthews* and figs.

3A and B and col. 4 lines 48-51 *in Bertram*].

19.   Referring to claims 18-20 and 23-25, these are rejected on the same basis as set forth

hereinabove.

20.   Referring to claim 26, caching is a well known concept in the art and it would have been

obvious to cache the pre-boot code because it would provide an increase in speed while reading

and executing the pre-boot while using minimal memory resources.

21.   Referring to claim 35, it is obvious in the Matthews-Stu-Bertram system that standard NT

loader code could reside on the system, since NT is a well known operating system, and that

other pre-boot code could be substituted for the NT loader code when the user desired to load the

alternate operating system.

22.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matthews and Stu

as applied to claims 1, 3, 7-12, 28-29 and 31-32 above, and further in view of Kwan[1].

23.   Referring to claim 5, Kwan teaches detecting a boot failure and assessing the failure in

order to make any necessary repairs [col. 3 lines 53-58 and col. 6 lines 40-46]. It would have

been obvious to include the boot failure detection means into the Matthews-Stu system to make

the system more reliable and robust.

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[1] As cited in the previous office action.

24.   Claim 13 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Matthews and Stu as applied to claims 1, 3, 7-12, 28-29 and 31-32 above, and further in view of

Mary[2].

25.   Referring to claim 13, Mary teaches setting a default item in a boot.ini file in order to

enable dual-boot capabilities in a computer system. It would have been obvious to one of

ordinary skill in the art to modify the Matthews-Stu system to set a default item in a boot.ini file

because it would allow the user to boot multiple operating systems on the computer.

26.   Referring to claim 33, this is rejected on the same basis as set forth hereinabove. Stu,

Matthews and Mary teach the method and therefore teach the program performing the method.

27.   Claim 14 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Matthews and Stu as applied to claims 1, 3, 7-12, 28-29 and 31-32 above, and further in view of

Dalton et al[3] [Dalton].

28.   Referring to claim 14, Matthews and Stu do not explicitly teach a boot.ini file. Dalton

explicitly teaches that computers comprise a boot.ini file, which is used to boot a computer

system and which also contains information on the names and locations of different bootable

operating systems [page 124]. It is obvious that each operating system to load would have a

corresponding file associated with loading that particular operating system and it is further

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[2] As cited in the previous office action.
[3] As cited by the applicant.

obvious that the name to load would change depending on which operating system the user is loading.

29.   Referring to claim 34, this is rejected on the same basis as set forth hereinabove. Stu, Matthews and Dalton teach the method and therefore teach the program performing the method.

30.   Claims 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stu, Matthews and Bertram as applied to claims 1- 3, 7-12, 15, 17-20, 24-26, 28-29 and 31-32 above, and further in view of Mary[4].

31.   Referring to claim 16, Mary teaches setting a default item in a boot.ini file in order to enable dual-boot capabilities in a computer system. It would have been obvious to one of ordinary skill in the art to modify the Matthews-Stu system to set a default item in a boot.ini file to identify the non-standard pre-boot code because the non-standard pre-boot code is what is used in the Matthews-Stu-Bertram system to load the alternate operating systems.

32.   Referring to claim 21, this is rejected on the same basis as set forth hereinabove. Stu, Matthews and Bertram teach the method and therefore teach the system performing the method.

33.   Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stu, Matthews and Bertram as applied to claims 1-3, 7-12, 15, 17-20, 24-26, 28-29 and 31-32 above, and further in view of Dalton et al[5] [Dalton].

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[4] As cited in the previous office action.

34.   Referring to claim 22, Stu, Matthews and Bertram do not explicitly teach a boot.ini file.

Dalton explicitly teaches that computers comprise a boot.ini file, which is used to boot a

computer system and which also contains information on the names and locations of different

bootable operating systems [page 124]. It is obvious that each operating system to load would

have a corresponding file associated with loading that particular operating system and it is

further obvious that the name to load would change depending on which operating system the

user is loading.

35.   Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stu, Matthews

and Bertram as applied to claims 1-3, 7-12, 15, 17-20, 24-26, 28-29 and 31-32 above, and further

in view of Feigenbaum et al[6] [Feigenbaum].

36.   Referring to claim 27, Stu, Matthews and Bertram do not explicitly teach that the image,

which is being stored in RAM, includes DOS operating system code. Rather, Stu, Matthews and

Bertram only teach that a boot image is being stored in RAM. Feigenbaum teaches that it is

advantageous to load DOS into system memory first before booting the computer system [col. 1

lines 25-28]. It would have been obvious to one of ordinary skill in the art to modify the

Matthews-Stu-Bertram system to load the entire operating system (more specifically DOS) into

memory because Feigenbaum teaches that memory can be accessed much faster than a boot disk

and would therefore inherently speed up the booting process [col.1 lines 40-64]. It is obvious

that in the Matthews-Stu-Bertram-Feigenbaum system, once the image is loaded into RAM, the

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[5] As cited by the applicant.

image comprising boot code and the operating system, the boot code would execute and load the operating system stored in RAM thus booting a DOS system strictly from memory and not from a boot floppy disk or a DOS hard disk partition.

37.   Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matthews and Stu as applied to claims 1, 3, 7-12, 28-29 and 31-32 above, and further in view of Feigenbaum et al[7] [Feigenbaum].

38.   Referring to claim 30, Matthews and Stu do not explicitly teach that the image, which is being stored in RAM, includes DOS operating system code. Rather, Matthews and Stu only teach that a boot image is being stored in RAM. Feigenbaum teaches that it is advantageous to load DOS into system memory first before booting the computer system [col. 1 lines 25-28]. It would have been obvious to one of ordinary skill in the art to modify the Matthews-Stu system to load the entire operating system (more specifically DOS) into memory because Feigenbaum teaches that memory can be accessed much faster than a boot disk and would therefore inherently speed up the booting process [col.1 lines 40-64]. It is obvious that in the Matthews-Stu-Feigenbaum system, once the image is loaded into RAM, the image comprising boot code and the operating system, the boot code would execute and load the operating system stored in RAM thus booting a DOS system strictly from memory and not from a boot floppy disk or a DOS hard disk partition.

Conclusion

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[6] As cited in the previous office action.

39.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mark Connolly whose telephone number is (703) 305-7849. The

examiner can normally be reached on M-F 8AM-5PM (except every first Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thomas C Lee can be reached on (703) 305-9717. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

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<div style="text-align:center">

Mark Connolly
Examiner
Art Unit 2115

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mc
July 21, 2004

THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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[7] As cited in the previous office action.